

**FIVE-YEAR REVIEW REPORT
WAYNE WASTE OIL SUPERFUND SITE
COLUMBIA CITY, INDIANA
JUNE, 1999**

I. INTRODUCTION

Section 121(c) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended by SARA and Section 300.430(f)(4)(ii) of the National Contingency Plan (NCP), require that periodic (no less often than five years) reviews are to be conducted for sites where hazardous substances, pollutants or contaminants remain at the site above levels that will not allow for unlimited use or unrestricted exposure following the completion of all remedial actions for the site. The purpose of such a review is to assess whether the remedial actions implemented continue to be protective of human health, and the environment. This review focuses on the protectiveness of the Wayne Waste Oil Superfund Site located in Columbia City, Indiana.

The United States Environmental Protection Agency (U.S. EPA) has established a three-tier approach to conducting Five-Year Reviews, the most basic of which provides a minimum protectiveness evaluation (Level I review). U.S. EPA contemplates that a Level I review will be appropriate in all but relatively few cases where site-specific considerations suggest otherwise. The second and third levels (Level II and Level III) of review are intended to provide the flexibility to respond to varying site-specific considerations, employing further analysis. Site-specific considerations, including the nature of the response action, the status of on-site response activities, and the proximity to populated areas and sensitive environmental areas determine the level of review for a given site. A Level I review is being conducted for the Wayne Waste Oil Superfund Site.

OSWER Directives 9355.7-02 (Structure and Components of Five-Year Reviews, May 23, 1991) and 9355.7-02A (Supplemental Five-Year Review Guidance, July 26, 1994) provide that U.S. EPA will conduct Five-Year Reviews as a matter of policy (Policy Review) at sites where no hazardous substances will remain above levels that allow unlimited use and unrestricted exposure after completion of a remedial action, but the remedial action goals specified in a Record of Decision (ROD), will require five or more years to attain, e.g. long-term response action sites (LTRA). The ROD at the Wayne Waste Oil Site established soil and groundwater clean-up standards which would allow for eventual remediation to attain unlimited use of groundwater at and beyond the Wayne Waste Oil Site boundary. To date, these groundwater standards have not been achieved. As a result, a groundwater pump & treatment system, air sparging system and vapor extraction system continue to operate at the site. A RCRA Subtitle D compliant cap also covers a municipal landfill on a portion of the Site.

The Wayne Waste Oil Site Group has conducted the remedial action at the Site in accordance with the ROD (signed March, 1990) and the Remedial Design(RD)/ Remedial Action(RA) Consent Decree (entered July, 1992). The remedial action selected for restoration at the Site is effective and protective of human health and the environment.

II. SITE HISTORY AND CONDITIONS

Background

The Wayne Waste Oil Superfund Site, also referred to as Wayne Reclamation and Recycling (WRR), covers approximately 30 acres in the southeast part of Columbia City, Indiana. The area north of the Site is commercial and residential. A cemetery borders the Site on the west. The Blue River forms the south and east boundary of the Site. The area across the Blue River to the south is residential, and an industrial park is under development to the east across the river. The Site is partly within the 100-year floodplain of the Blue River. Nearby residential areas are served with municipal drinking water. Two of the City's municipal water supply wells are located immediately north of the Site.

The Site can be divided into three major areas. The southeast portion lies in a floodplain adjacent to the Blue River and was an area where liquid wastes were stored and dumped. The northeast portion was the location of a landfill area which was operated by Columbia City from 1953 to 1970. The central and western portion of the Site lies in an upland area which was the location of numerous tanks from the oil recycling and reclamation operations.

WRR and its division, Wayne Waste Oil, began operating an oil reclamation business at the Site in 1975. In 1976, a license to haul liquid industrial waste was granted by the Indiana Pollution Control Board. In 1980, the Indiana State Board of Health (ISBH) began an investigation as a result of reports from a former WRR employee that hazardous wastes were being illegally disposed of at the Site. ISBH determined that between February 1979 and May 1980, WRR filed hauler reports stating that it had disposed of 250,000 gallons of sludge at the Williams County Landfill in Bryan, Ohio. However, the landfill had not received any waste shipments from WRR during that time.

In 1982, WRR and one of its principals, Wayne Brockman, pleaded guilty to illegal "depositing of contaminants" and filing false hauler reports. They were required to pay a fine, to fund a risk assessment for the Site, and to pay for the cleanup. WRR did not perform the cleanup required under its guilty plea.

Remedial Planning Activities

Remedial planning began as the Wayne Waste Oil Superfund Site was listed on the National

Priorities List in December of 1982.

In July 1986, approximately 100 potentially responsible parties (PRPs) entered into an Administrative Order by Consent to conduct a removal action at the Site. Because this work performed from late summer 1986 to fall 1987 was not satisfactorily completed, a Unilateral Administrative Order was issued to a group of four PRPs in February 1988 (modified in March and May 1988). Work under this second order was conducted from May 1988 to March 1989.

These removal actions involved the disposal of surface and buried drums; excavation and disposal of liquids, sludges, and contaminated soil from various areas of the Site; and disposal of the contents of storage tanks. The two removal actions resulted in the removal of more than 13,000 tons of material from the Wayne Waste Oil Site.

In August 1987, U.S. EPA entered into an Administrative Order by Consent with over 100 PRPs to conduct the Remedial Investigation (RI)/Feasibility Study (FS).

The RI, completed in June 1989, documented that eight volatile organic compounds (VOCs) and two metals present in the groundwater beneath the site exceeded Maximum Contaminant Levels (MCLs). Major contaminants of concern in the groundwater included trichloroethylene (TCE) and vinyl chloride.

VOC contamination in the subsurface soils also presented a risk due to the potential for further leaching of contaminants into the groundwater. Other contaminants of concern in the soils were polynuclear aromatic hydrocarbons (PAHs) and lead, due to a risk from direct contact with or inhalation of surface soils.

The FS was completed in January 1990.

The findings of the RI/FS indicated the following:

SURFACE AND SUBSURFACE SOILS: The highest levels of volatile organic soil contamination were detected in the southwest area of the site along the Blue River; in the northern portion of the Site west of the old City Landfill; and in the southeast corner of the Site. The major contaminants of concern were chlorinated ethenes and to a lesser extent, chlorinated ethanes, toluene and alkanes. Certain inorganic compounds such as magnesium, chromium, copper, zinc and lead were detected at levels above those considered to be common in background soils.

The old City Landfill did not have an appropriate cover that complied with RCRA Subtitle D regulations. The limited information regarding waste disposal indicated that municipal solid waste was disposed there, although some hazardous waste may have been received by the City Landfill.

SURFACE WATER AND SEDIMENTS: Concentrations of inorganic parameters in surface water and sediments from the Blue River adjacent to the Site were not significantly above those upstream from the Site boundary. Copper and zinc in sediments did show slight exceedences. Concentrations of cyanide in on-site surface water sediment, pond and wetland areas were elevated. Volatile organic compounds were elevated in surface water locations on the Site.

GROUNDWATER: Groundwater flow in the upper aquifer zone at the Site is from west to east. In general, groundwater is recharged to the west of the Site, and flows toward the Blue River. The Blue River flows along the eastern and southern boundaries of the Site. The majority of the groundwater contamination is caused by chlorinated ethenes and ethanes and occurs in the same general location as the volatile organic soil contamination.

A Columbia City municipal well is located in the lower aquifer zone just north of the Site. The lower zone groundwater flow is from northwest to southeast and was not found to be contaminated.

U.S. EPA and the Indiana Department of Environmental Management (IDEM) prepared a ROD in March of 1990 that outlined a soil and groundwater containment & treatment Site remedy. A corresponding RD/RA Consent Decree was entered in court in July of 1992.

III. SUMMARY OF RESPONSE ACTIONS

The response actions outlined for the Wayne Waste Oil Site in the March 1990 ROD included the following remedial components:

- * Construction, operation, and maintenance of a soil vapor extraction (SVE) system in the VOC-contaminated soil areas;
- * Construction, operation, and maintenance of a groundwater extraction, treatment and discharge system;
- * Monitoring of groundwater and air;
- * Delineate the extent of the municipal landfill;
- * Construction and maintenance of a RCRA Subtitle D compliant cap over the municipal landfill;
- * Deed restrictions to ensure the protection of the municipal landfill cap;
- * Cover PAH-contaminated soil or consolidate it under the municipal landfill cap;

- * Delineate and remediate lead-contaminated soils via soil washing, or immobilization and stabilization technologies;
- * Remove and treat the contents of all above- and below-ground tanks, and delineate the extent of contamination due to spills or leaks associated with the tanks;
- * Remove and dispose of site debris, including but not limited to all tanks (above-ground, below-ground, and partially buried), tanker trucks, and the incinerator;
- * Install an upgraded security fence around the site.

A Consent Decree was entered in the Northern District Court of Indiana in July 1992. Under this Consent Decree, a group of PRPs agreed to conduct the remedial design (RD) and complete the remedial action (RA).

The Consent Decree required additional studies to supplement the available technical information for design of the remedy. The additional studies confirmed a need for a passive gas venting system for the municipal landfill, as well as a slurry wall around the southeast area of the Site to maintain an upward groundwater gradient to prevent movement of contaminants into the lower aquifer. Additional studies also indicated that air sparging inside the slurry wall would enhance groundwater remediation, and thus, air sparge wells were incorporated for the southeast area.

At the time of earlier investigations, the owner was operating from a building on-site. During the remedial action, several additional drums and buckets of material were discovered inside the building. Although most contained very little material, removal and proper disposal of these drums and buckets was also addressed as part of the remedial action.

Analytical results from sampling conducted as part of pre-design investigations indicated that the subsurface lead was not leaching. With no direct contact threat and no impact to the groundwater, remediation of the lead-contaminated soils was not warranted.

Removal of surface debris on the landfill, removal of an incinerator, and removal of above-ground and underground storage tanks took place in 1993, in accordance with approved work plans. The RD for the landfill (City of Columbia City) was approved in January 1994, construction began in May 1994 and construction was complete in August 1994. The RD for the remaining activities (Non-City Settlers) was approved in February 1994 and construction began in June 1994. The soil vapor extraction and groundwater pump and treat systems were completed in January 1995 with all Site construction completed in June 1995.

IV. REMEDIAL OBJECTIVES

Remedial objectives at the Wayne Waste Oil Superfund Site include the elimination of any excess soil ingestion, inhalation, direct contact, or groundwater leachate human health risks by treatment, containment and removal of contaminated soils and sediments. Groundwater remedial objectives are the attainment of primary and secondary maximum drinking water contaminant levels (MCLs), and elimination of any excess life-time cancer risk in groundwater.

Excess human health risks due to contaminated soils and sediments are being addressed by the soil remedies at the Site. The removal actions of 1993 and the municipal cap construction completed in 1994 reduced a substantial portion of the Site risks. The soil vapor extraction system has been operating since 1995, and has removed approximately 10,000 lbs. of VOCs as of the end of 1998. Soil VOC cleanup standards are based on levels that will not leach contaminants to the groundwater, and are outlined in the Site Operation, Maintenance and Monitoring (O,M&M) Plan.

The Site slurry wall, groundwater pump & treatment and air sparging system have been operational since 1995. The groundwater treatment system has processed over 55,000,000 gallons of groundwater and approximately 700 lbs. of VOCs have been removed as of the end of 1998. Groundwater contaminant levels and risks have been substantially reduced toward cleanup levels as listed in the O,M&M Plan.

V. APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARs)

Five-Year Review guidance establishes policy for the U.S. EPA to review and analyze the remedial action as it is effected by newly promulgated or modified Federal and State environmental laws. ARARs listed in the ROD pertaining to groundwater remediation, soil remediation and air emissions at the Wayne Waste Oil Site remain essentially unchanged and are still considered relevant and appropriate.

Groundwater that is extracted and treated at the Wayne Waste Oil Site is discharged to a sewer line to the Columbia City Wastewater Treatment Works Plant (POTW). This activity is regulated by Section 307(b) of the Clean Water Act, and regulations promulgated thereunder (40 CFR 403). Effluent from the Wayne Waste Oil Site groundwater treatment plant has continuously met all U.S. EPA, State of Indiana, and Columbia City POTW sampling requirements.

VI. SUMMARY OF SITE VISITS

The Wayne Waste Oil Site has been visited several times during the operation and maintenance period. The most recent visit was April 12 and 13, 1999. During each visit the Site VES, air

sparging system, municipal cap and Site treatment plant have been properly maintained. In addition, the groundwater wells have been properly capped and locked, and the Site security fence has been intact.

VII. AREAS OF NONCOMPLIANCE

The remedy selected in the ROD has been implemented and remains functional, operational and effective. As long as the Wayne Waste Oil Group continues to operate and monitor the Site treatment plant, the remedy should contain the groundwater plume inside the slurry wall and reduce contaminant concentrations in the aquifer. The source area remediation, including the RCRA Subtitle D Compliant municipal waste cap, VES and Site security fence, insures that source area contamination is either treated or contained, and a permanent barrier exists to prevent human contact.

VIII. RECOMMENDATIONS/TECHNOLOGY

U.S. EPA recommends that the Wayne Waste Oil Group continue to operate and maintain the groundwater air sparging and pump & treatment system in order to contain the groundwater plume inside the slurry wall, and reduce contaminant concentrations toward Site drinking water standards. Monthly, semi-annual and annual groundwater treatment system monitoring and sampling should continue to assure that the system is operating properly and contaminant concentrations are reported.

The Site vapor extraction system should continue to operate until soil VOC clean-up levels are attained to assure that contamination does not leach into groundwater and create an exceedence in groundwater clean-up standards. It is likely that the SVE system will be able to operate and discharge directly to the atmosphere, while meeting U.S. EPA and Indiana air emission requirements. Monthly and semi-annual air and SVE sampling should continue to provide emission monitoring reporting on a regular basis. The Site municipal waste landfill should be inspected for cap integrity and proper drainage. Other Site inspections include the security fence and signs, groundwater extraction, treatment and discharge system, and the VES network.

IX. STATEMENT ON PROTECTIVENESS


Closure and post closure maintenance of the Wayne Waste Oil Site municipal landfill cap continues to provide adequate protection of human health and the environment. The groundwater and soil vapor extraction, treatment and discharge system continues to operate. The treatment system combined with Site access restrictions and a security fence provide adequate protection to human health and the environment.

X. NEXT REVIEW

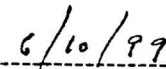
Since it is likely that hazardous substances, pollutants or contaminants will remain at the Wayne Waste Oil Site, continued restrictions on land and groundwater use will remain and require U.S. EPA to conduct another Five-Year Review during fiscal year 2004.

XI. IMPLEMENTATION REQUIREMENTS

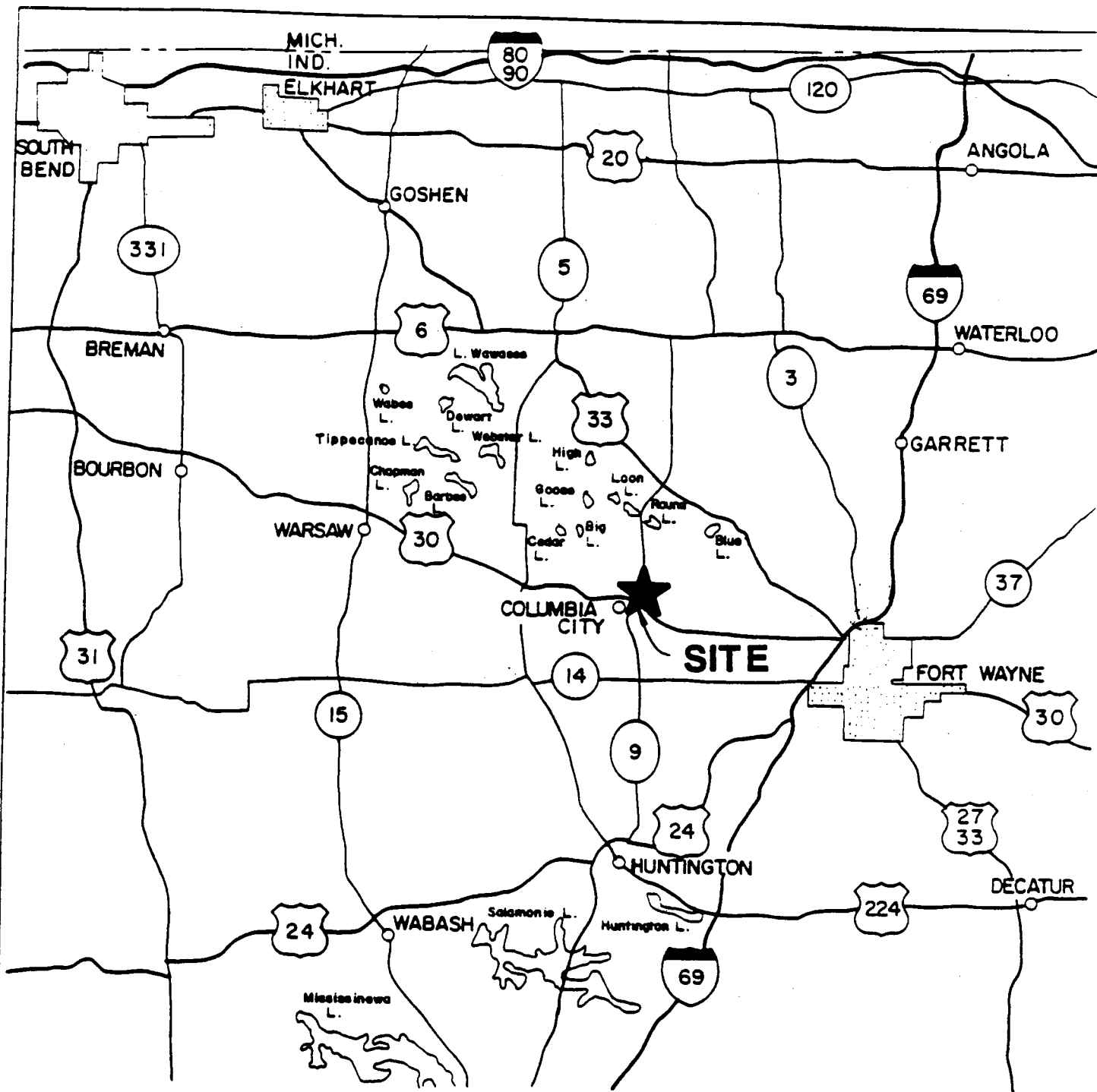
Prior to the next Five-Year Review, the above mentioned recommendations should be implemented and maintained.



William E. Munro, Director
Superfund Division



Date



SCALE: 1"=10 MILES

FIGURE

WRR SITE LOCATION MAP

MONITORING WELL LOCATION AND NUMBER

..... TREE LINE

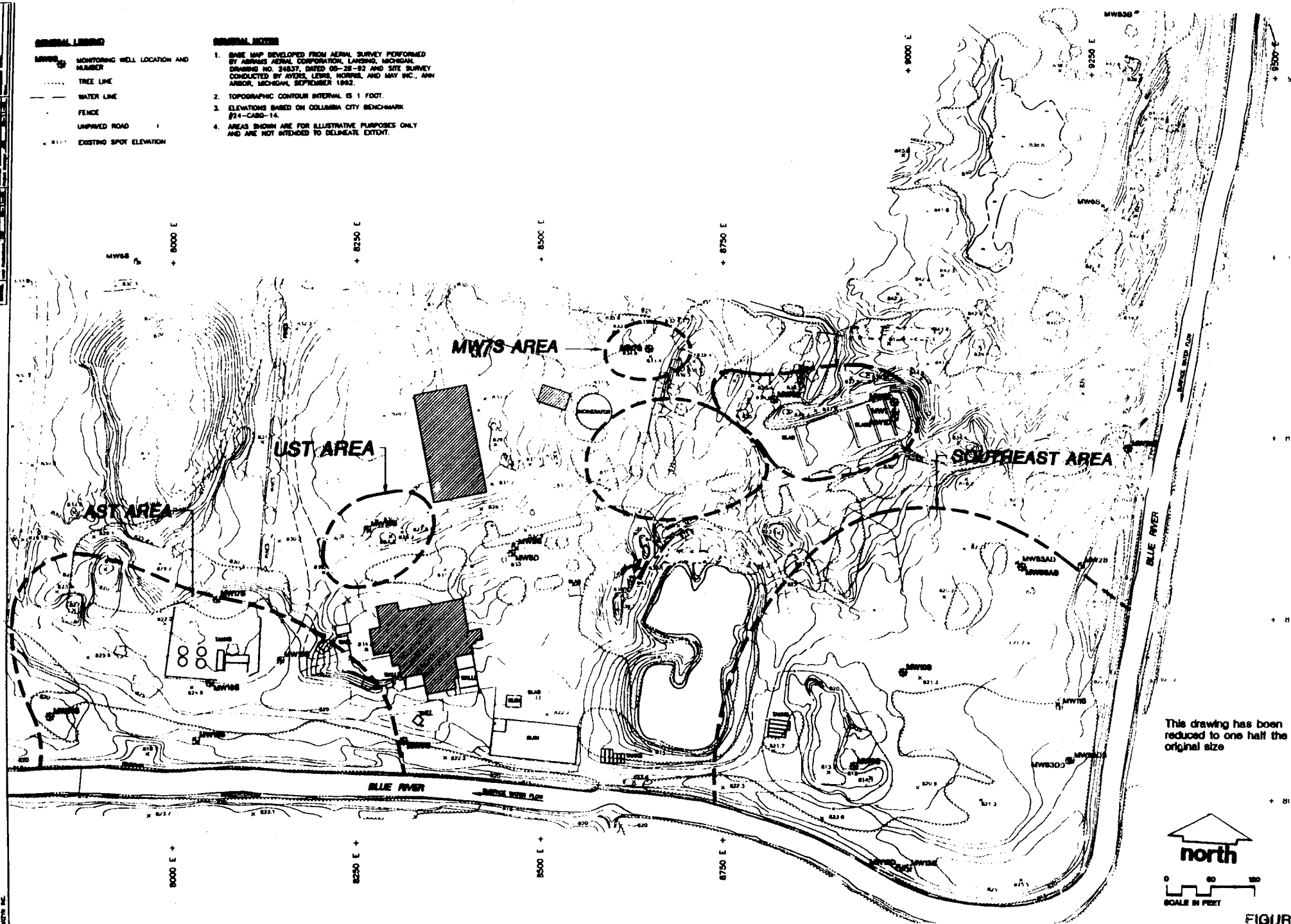
———— WATER LINE

..... FENCE

..... UNPAVED ROAD

..... EXISTING SPOT ELEVATION

1. BASE MAP DEVELOPED FROM AERIAL SURVEY PERFORMED BY AIRSPAN AERIAL CORPORATION, LANSING, MICHIGAN. DRAWING NO. 24637, DATED 02-28-92 AND SITE SURVEY CONDUCTED BY EYLES, LEWIS, MORRIS, AND MAY INC., ANN ARBOR, MICHIGAN, SEPTEMBER 1982.
2. TOPOGRAPHIC CONTOUR INTERVAL IS 1 FOOT.
3. ELEVATIONS BASED ON COLUMBIA CITY BENCHMARK #24-CABO-14.
4. AREAS SHOWN ARE FOR ILLUSTRATIVE PURPOSES ONLY AND ARE NOT INTENDED TO DELINEATE EXTENT.



This drawing has been
reduced to one half the
original size



FIGURE